

## The restoration of *Ipomoea muricata* (L.) Jacq. (Convolvulaceae)

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Confusion about the dates of publication for *Ipomoea muricata* (L.) Jacq. and *I. muricata* Cav. has resulted in both names being set aside in favour of later names proposed for these two distinct taxa. Investigation of the publication date for Jacquin's *Plantae Rariorum Horti Caesari Schoenbrunnensis* clarifies the nomenclature for these two tropical morning glories. *Ipomoea muricata* (L.) Jacq. is the earlier name, and it is herein reinstated for the plant recently called *I. turbinata* Lagasca by some authors. *Ipomoea capillacea* (Kunth) G. Don is the correct name for *I. muricata* Cav.

**KEYWORDS:** *Convolvulaceae*, *Ipomoea*, nomenclature.

### INTRODUCTION

For much of the twentieth century there has been confusion regarding the usage of the names *Ipomoea muricata* (L.) Jacq. and *Ipomoea muricata* Cav. The crux of the problem is the date of publication for these two competing names. *Ipomoea muricata* Cav. is currently treated as a synonym of *I. capillacea* (Kunth) G. Don (McDonald, 1995), on the grounds that *I. muricata* Cav. is a later homonym of *I. muricata* (L.) Jacq. However, *I. muricata* (L.) Jacq. is currently treated as a synonym of *I. turbinata* Lag. (Gunn, 1969, 1972, *et alii*) on the grounds that *I. muricata* (L.) Jacq. is the later homonym. Both of these names have priority over the names under which they have been synonymized, and of course only one can be the later homonym, but the question is which one?

The underlying problem is that there is confusion about the dates of publication for the works in which the names appear, leading to the pernicious confusion about which name is earlier. We explicate the dates for the two published works, summarize how pertinent authors dealing with *Ipomoea* have interpreted those dates, and then provide some new data that clarify the publication both for the Cavanilles work and for that of Jacquin.

### CAVANILLES' ICONES ET DESCRIPTIONES PLANTARUM

The first edition of *Taxonomic Literature* (Stafleu,

1967: 79–80) provided detailed dates of publication for each of the six volumes of Cavanilles' *Icones*. The fifth volume, in which *I. muricata* Cav. appears, is dated Jun–Sep 1799. There is no significant difference in the information about Cavanilles' *Icones* provided in *TL-2* (Stafleu & Cowan, 1976: 473), although the date of publication for the fifth volume is established as April 1799. The reason for this slightly earlier date is unclear to us, since the preface of this volume is dated 20 May 1799. There is no updating of this information in Supplement III (Stafleu & Cowan, 1995) of *TL-2*.

Based on the dates of publication given by Stafleu (1967), Gunn (1969: 119) took up the name *I. turbinata* Lag. for the nocturnal-flowered and now pantropical morning glory and cited the nomenclature this way: "*Ipomoea muricata* (L.) Jacq., Hort. Schoenb. 3(2):40, t. 323. 1798 [1803], nom. illeg. non *I. muricata* Cav. 1794 [1799]".

In his later paper summarizing the taxonomy of the North American members of *Ipomoea* sect. *Calonyction*, Gunn (1972: 163) rearranged the citation in one respect: he reversed the dates inside and outside the square brackets for the Cavanilles name.

"*Ipomoea muricata* (L.) Jacq., Hort. Schoenb. 3(2): 40, t. 323. 1798 [1803], nom. illeg., non Cav. 1799 [1794]".

How Gunn (1969, 1972) came to include the date of 1794 in either citation is unclear, and in neither case does he explain the significance of the dates inside square brackets. But his intention becomes evident from the abstract to his earlier paper (Gunn, 1969: 116) where he

says “Because *Ipomoea muricata* (L.) Jacquin, 1803 is a later homonym of *I. muricata* Cavanilles, 1799...”. Thus it seems apparent that Gunn considered *I. muricata* Cav. to date from 1799, and he took this to be the earlier of the two names. The significance for the reversal of dates in Gunn (1972: 163) is unknown.

In contrast, based on the same dates of publication provided by *TL-2*, McDonald (1995) considered *I. muricata* Cav. to be the later name, and he therefore took up the next available name for the diurnal-flowered Mexican species, calling it *I. capillacea* (Kunth) G. Don (1838).

Despite these widely differing interpretations, there does not seem to be any disagreement concerning the dates of publication that *TL-2* provides for Cavanilles’ *Icones*. Although one recent account (McVaugh, 2000: 194) indicates a publication date of 1798 for *I. muricata* Cav., this can be shown to be an error by internal comparison with other Cavanilles taxa also published in *Icones* volume 5 (e.g., *Ruellia rubricaulis*, *Loureiria glandulosa*, *L. cuneifolia*, *Salvia patens*) that are reported elsewhere in McVaugh (2000). There is no evidence to support Gunn’s (1969, 1972) report of 1794 as the date of publication and there seems no reason to question the year of publication of 1799 for *I. muricata* Cav. The problematic date, then, lies with the Jacquin work.

## JACQUIN’S *PLANTAE RARIORUM HORTI CAESAREI SCHOENBRUNNENSIS* DESCRIPTIONES ET ICONES

The first edition of *Taxonomic Literature* (Stafleu, 1967: 232) has this to say about the dates of publication for the four volumes of N. J. Jacquin’s account of the plants grown in the Schoenbrunn gardens in Vienna:

“*Publ.*: The four volumes bear the dates 1797, 1797, 1798, and 1804 on the title-pages, but there are reasons to assume that publication was more involved. Volumes 1 and 2 were reviewed (as of “1798”) only in 1800 by the *Med.-Chir. Zeitung* (Salzburg) [1800(1): 257–261]. Banks received a letter from Jacquin dated 18 Jan 1803 in which the sending of vol. 3 part 2 was announced. Vol. 4 was announced and sent by Jacquin on 5 Mar 1805. The history of the book merits further investigation”.

As noted above, *I. muricata* (L.) Jacq. appears in the third volume of the *Hortus Schoenbrunnensis* and thus the questions raised in *TL-1* about the date of publication, particularly for the third volume, are key.

There is no significant difference in the publication data provided by *TL-2* (Stafleu & Cowan, 1979: 412–413), although a listing is provided for each volume with the inclusive pagination and plates given, along with the same dates from *TL-1* for the title pages. One

sentence has been added to the commentary: “Volume 1 was completed by 3 Mai 1798 (Mag. Encycl. 1798(4): 389)”. The controversy hinges on how one interprets the title page date for volume 3 and the comment about the letter from 1803. This comment led Gunn (1969, 1972) to believe that *I. muricata* (L.) Jacq. was published in 1803, making it the later name, and he accordingly took up *I. turbinata* Lag. (1816) for the pantropical, night-flowering species.

Under current interpretation of the *ICBN* (Art. 31.1, Greuter & al., 2000), the date given on the title page must be accepted as correct unless there is evidence that it is wrong. In order to investigate the possibility that the third volume of Jacquin’s *Hortus Schoenbrunnensis* did not appear until 1803, Neil Chambers examined the relevant correspondence between the Jacquins (father and son) and Sir Joseph Banks, as well as copies of the *Hortus Schoenbrunnensis* in the library of the Natural History Museum, and Banks’ personal copy, now in the British Library.

First we present a summary of the relevant correspondence, followed by brief commentary to place the contents of the letters in context.

## THE CORRESPONDENCE

From Freiherr Nicolaus Joseph von JACQUIN F.R.S. | Vienna | 19 December 1802 |

Right Honourable Sir, I had the pleasure to send you by our botanical Gardner Van der Schot, who passed last autumn through London on his journey to Falmouth, the two first Fasciculi of my *Fragmenta botanica*, and the plates wanting to your third volume of *Hortus Schoenbrunnensis*, with a letter from my Son. I suppose, you will have received them safely, though I have not heard since from Van der Schot. ...

[N.H.M. Jacquin MS. 31.]

From Freiherr Joseph Franz von JACQUIN | Vienna | 10 August 1802 |

... My father presents You his most humble compliments and begs to accept Kindly, by the hands of Mr van der Schot, the two first fasciculi of his *Fragmenta botanica* as a specimen of his high esteem for You. He also has added the letterpress and plates wanting to the 3th of the *Hortus Schönbrunnensis*. The price of this third Volume is 90 florins, which amounts with the two former Volumes to 240 florins. ...

[B.L. Add. MS. 8100, f. 9.]

From Freiherr Joseph Franz von JACQUIN | Vienna | 18 January 1803 |

Monsieur et cher Ami. Mon pere à expédié il y a

quinze jours sous Votre adresse une caisse, contenant les livres suivants:

	fl. d'icy = fl. d'Hollande
Hortus Schönbr. pars 2da Vol. 3tu -	50 = 60 f 10 Sls.
Le meme pour Votre ami - f 60 - 10 -	50 = 60 f 10 Sols
Stirpes americanæ pictæ pour Votre ami -	320 = 400
Fragmenta botanica fascii. 1mier /f 400/ -	20 = 25
Le meme pour Votre ami - f 25 -	20 = 25
Fragmenta botanica fascii. 2dus -	25 = 32 f 4 sls.
Le meme pour Votre Ami - f 32 - 4 -	25 = 32 f 4 sols.
(... Mr. Helmolt f 517 - 14 )	510 f = 635 f 8 sols.

Je Vous prie de garder cette somme à sa disposition ultérieure. Il a aussi pris la liberté de joindre dans la caisse quatre fasciculi de ses icones et trois exemplaires du 3me Volumen du Hort. Schönbr. qui appartiennent à Messieurs Lushdmans, libraire à Leyde, auxquels je Vous prie de les faire parvenir. Comme ces livres ont augmenté par leur poids les frais du transport; mon pere Vous prie de mettre sur son compte le surplus qu'ils ont occasionné, de le soustraire de la somme susdite, et de me l'indiquer à son temps. La table de *Amaryllis orientalis* manquante à Votre ami est aussi dans la caisse.

[Hollandsche Maatschappij der Wetenschappen, Haarlem; Dawson MS 68 (1) 36.]

Dawson (1958: 446) records the third letter extract given above, by Joseph, thus "Informs B. that his father has dispatched a box containing part 2 of Vol. 3 of *Hortus Schoenbr.* and fasc. 1 and 2 of *Fragmenta Botanica*, and a note of the respective prices...". It is possible that Stafleu (1967) used this reference, but did not look at the letters themselves, and therefore did not notice the comments made by Nicolaus in 1802, also recorded in brief by Dawson (1958: 448). Nicolaus' comments only indicate that Banks was sent "plates wanting" in vol. 3, plates that were presumably missing or which Banks had not previously received.

The implication that these "parts" (actually "plates") were published in 1803 or after is therefore not supported by the letters. Indeed, it seems more likely that the plates were on their way late in 1802, having been published in 1798. Joseph's earlier 1802 correspondence with Banks (Dawson, 1958: 446) corroborates such an interpretation. During this period individual plates and portions of works were exchanged by botanists, as single gifts or to complete existing works. In keeping with this practice, it seems that Banks was happy to help the Jacquins distribute publications among botanists and collectors in Europe, and in this case that task included the missing parts/plates of *Hortus Schoenbrunnensis*, some of which Banks wanted for vol. 3 of his own copy of the work. Support for such a view comes from scrutiny of

the volumes themselves and a close reading of the letters.

A copy of the *Hortus Schoenbrunnensis* that is held at the Natural History Museum, London, was checked: Press Mark 58.006 VIE JAC F. This work comprises four volumes: vol. I, 1797; vol. II, 1797; vol. III, 1798; and vol. IV, 1804. However, it is bound in two large volumes, with the 1797 volumes forming the first, and the later volumes forming the second. Despite this, the structure and order of publication of the work are clear. Four separate volumes were issued from 1797 to 1804, each with its own title page showing a distinct date of publication.

At the British Library, two copies of the *Hortus Schoenbrunnensis* were found to be bound in four separate volumes, vol. I 1797, vol. II 1797, vol. III 1798 and vol. IV 1804. It seems probable that the Natural History Museum copy was rebound either by the individual who originally purchased it, or by subsequent owners. This sometimes happens with older works that were issued in parts and volumes, especially when sections were missing and obtained later on. However, the British Library holdings prove beyond doubt that *Ipomoea muricata* was published by Jacquin in 1798, for they both have it in vol. 3, 1798, t. 323. The press marks for these copies are 40.i.1–4 and 455.h.1–4. It is worth noting that the latter of these is, in fact, Banks' personal library copy, with his library stamp on the reverse of the title page.

With this additional insight, there seems no doubt that the date of publication for Jacquin's *Plantae rariorum horti caesarei schoenbrunnensis*, vol. 3 is in 1798, making his *Ipomoea muricata*, based on *Convolvulus muricatus* L., the earliest name.

## NOMENCLATURAL CONSEQUENCES OF THESE FINDINGS

Since the publications of Gunn (1969, 1972) there has been widespread adoption of the name *Ipomoea turbinata* Lag. for the nocturnal-flowered, now pantropical species (Austin, 2000) in the botanical taxonomic literature (e.g., Verdcourt, 1978; Austin, 1980, 1982, 1998; Khan, 1985; Gonçalves, 1987; Lejoly & Lisowski, 1992; Fang & Staples, 1995; Austin & Huáman, 1996). In order to preserve current usage, it might seem advantageous to propose conservation of *I. turbinata* for this species, and reject *I. muricata* (L.) Jacq. However, when the non-taxonomic literature is surveyed, the appearance that the name *I. turbinata* is used consistently for the "purple moonflower" is dispelled. A Google search for *Ipomoea muricata* returned 202 hits; whereas a search for *Ipomoea turbinata* returned 134. To be sure, some unknown number of the 202 hits actually refer to the diurnal-flowering, Mexican species (*I. capillacea*). If the phrase "purple moonflower" is added, then the number

of hits becomes 57 and 29, respectively. Furthermore, acceptance of the name *Calonyction muricatum* (L.) G. Don for this species continues to be widespread, as in noxious weed regulations of several U.S. states, as evidenced by 154 additional hits of web pages containing this name where “*Ipomoea turbinata*” is absent. Searches of online life-science bibliographic databases gave similar indications. Thus, in the general literature, the names *I. muricata* or *C. muricatum* continue to predominate for the purple moonflower, and it becomes more difficult to make a compelling case for conserving the name *I. turbinata* for this species. This being the case, there is no alternative but to take up once again the name Gunn (1969, 1972) set aside for the pantropical, nocturnal-flowering purple moonflower.

## NOMENCLATURAL SUMMARY

***Ipomoea muricata*** (L.) Jacq., Pl. hort. schoenbr. 3(2): 40, pl. 323. 1798. Basionym: *Convolvulus muricatus* L., Syst. Nat., ed. 12, 2: 156. 1767; Mant. Pl.: 44. 1767 (non sensu Blanco, 1837) = *Calonyction muricatum* (L.) G. Don, Gen. Hist. 4: 264. 1837 = *Ipomoea turbinata* Lag., Gen. Sp. Pl.: 10. 1816, nom. illeg. (superfluous name for *I. muricata* (L.) Jacq.) – Lectotype (designated by Verdcourt, 1963: 130): India, Suratt, Herb. Linn. 218.18 (LINN!). Additional synonyms are enumerated in Gunn (1969: 121; 1972: 163, 165).

***Ipomoea capillacea*** (Kunth) G. Don, Gen. Hist. 4: 267. 1837. Basionym: *Convolvulus capillaceus* Kunth in Humboldt & al., Nov. Gen. Sp. 3, ed. 4<sup>o</sup>: 97; ed. f<sup>o</sup>: 76. 1819 – Type: Colombia, between San Miguel and Rio Putes, Nov. 1801, *Humboldt & Bonpland s.n.* (holotype P, photos F, GH; isotypes (2) P!). = *Ipomoea muricata* Cav., Icon. 5: 52, pl. 478. 1799, non Jacq. (1798). Type: Mexico, Guanajuato, Oct., *Cavanilles s.n.* (holotype MA; isotypes MA). Additional synonyms are enumerated in McDonald (1995: 100–101).

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